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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,186	09/11/2003	Ronald Scott Beckley	A01477	5800
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ROHM AND HAAS COMPANY PATENT DEPARTMENT 100 INDEPENDENCE MALL WEST PHILADELPHIA, PA 19106-2399			EXAMINER BERNSHTEYN, MICHAEL	
			ART UNIT 1713	PAPER NUMBER
			MAIL DATE 05/03/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/660,186

Applicant(s)

BECKLEY ET AL.

Examiner

Michael Bernshteyn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 11-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 11-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/27/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action follows a response filed on February 8, 2007. No claims have been amended; claims 7-10 have been cancelled without prejudice; claims 21-24 have been added.
2. Claims 1-6 and 11-24 are active.

Claim Rejections - 35 USC § 103

3. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.
4. Claims 1-6 and 11-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable as obvious over Irie et al. (U. S. Patent 5,959,028), for the rationale recited in paragraph 5 of Office Action dated on November 9, 2006, and comments below.
5. Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Irie et al. (U. S. Patent 5,959,028) in view of Leake (U. S. Patent 6,521,716)

With regard to the limitations of claim 21, Irie does not disclose that the curable mixture does not contain any of the catalysts usually used for Michael addition reactions.

Leake discloses that the reaction mixture in Michael reaction becomes less polar during curing, and in a coating the affinity for water should consequently decrease as curing progresses. In some cases, a water-soluble polymer/crosslinker system can be transformed into a water-resistant cured coating upon crosslinking. There is, however, a

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need for Michael curing coatings, which cure more rapidly, particularly at ambient temperature, and/or are capable of curing **without the need for powerful alkaline catalysts** (col. 1, line 67 through col. 2, line 9). Leake exemplifies that PPDIDC and EEMTCH were cured without catalyst under the conditions described in Example 25 and formed a tack-free film in 48 hours (Example 26, col. 32, line 50 through col. 33, line 15).

Both references are analogous art because they are from the same field of endeavor concerning new coating resin composition curing by Michael addition reaction.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the curing without the need for powerful catalysts as taught by Leake in Irie's curable resin composition for coating in order to obtain Michael curing coating which cure more rapidly, particularly at ambient temperature (US'716, col. 2, lines 5-8)), and thus to arrive at the subject matter of instant claim 21.

6. Claims 22-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable as obvious over Irie et al. (U. S. Patent 5,959,028).

With regard to the limitations of claim 21, Irie does not disclose that the curable mixture comprises 2% or 1% or less by weight non-reactive volatile compounds, based on the total weight of said curable mixture.

It is worth to mention that Irie discloses in example 31 (col. 12, lines 40-65) the amount of non-reactive volatile solvent (isopropyl alcohol) is 7%, which is close to the instantly claimed 2%.

In the absence of showing criticality in the specification of maintaining the amount of 2% or less by weight non-reactive volatile compounds, based on the total amount of curable mixture, it is the examiner position to believe that Irie's curable mixture characterized by exactly the same reactive equivalent ratio and the same compounds, such as multi-functional Michael donor, multi-functional Michael acceptor and an anion of a Michael donor, each of them has molecular weight within the claimed ranges, would be substantially identical to the instant claimed curable mixture.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the adjusted minimum amount of non-reactive volatile compounds in Irie's curable mixture with reasonable expectation of success because it is well known that the less amount of volatile organic compound is in the composition, the more tendency of liquid material to pass into the vapor state, which is highly desirable for coatings, adhesives, etc.

It is worth to mention that Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range. "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g) for a discussion of criticality and unexpected results.

Response to Arguments

7. Applicants traverse the rejection of claims 1-6 and 11-20 under 35 U.S.C. §103(a) as being unpatentable as obvious over Irie et al (U. S. Patent 5,959,028).

Applicant's arguments have been fully considered but they are not persuasive.

8. Applicants contend that as Applicants have presented in greater detail in previous papers regarding the present application, Irie teaches compositions suitable for Michael reaction that are dissolved or dispersed in a volatile, non-reactive substance (see Irie, col. 2, lines 10-15 and col. 6, lines 19-21). Applicants submit that it is well known that, in order for a composition to have ingredients that are "dissolved or dispersed" in a solvent, as in Irie's invention, the amount of solvent in the composition must be much more than 5% by weight of the composition (page 7, the last paragraph).

Applicants contend that in Irie's Example 31, the ingredients listed in the table at col. 12, lines 52-64 are taught by Irie to be a "base coat composition." Applicant submits that Irie does not teach or suggest that the "base coat composition" is an example of Irie's invention. The ingredients of Irie's "base coat composition" are aluminum flake, acrylic varnish, two melamine resins, and isopropyl alcohol. None of these materials is a Michael donor. Therefore, Applicants submit that the "base coat composition;" disclosed in Irie's Example 31 does not teach or suggest a composition containing a multi-functional Michael donor, and therefore Irie's teaching regarding the "base coat composition" in Irie's Example 31 does not teach or suggest the composition recited in the present claims (page 8, 1st paragraph).

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9. It is noted that claim 1 recites the limitations only for non-reactive volatile compound, but not for organic solvents. Therefore, the presence of an organic solvent conventionally used in coating industry (US'028, col. 6, lines 19-32) does not contradict one another because there are no specific limitations for usage of the organic solvents in instant claims.

Furthermore, the invention of Irie et al. relates to a curable resin composition for coating use. More particularly, it relates to a resinous composition, which cures through a Michael reaction (col. 1, lines 5-7). Irie discloses that in certain applications where the curable composition of the present invention is applied onto a pigmented base coat wet-on-wet and baked simultaneously with the base coat as in car body finishing (col. 5, lines 27-30). Finally, in Example 31 he exemplifies the process of obtaining of base coat composition using the claimed ingredients, Michael addition reaction, and only 7% of non-reactive volatile compound, such as isopropyl alcohol (col. 12, line 40 through col. 13, line 2).

10. Applicants contend that regarding the anion of a Michael donor: In Irie's discussion of catalysts for use with Michael addition reactions (col. 4, line 21 through col. 5, line 26), Irie does not teach or suggest the use of an anion of a Michael donor as catalyst for Michael addition. Applicants note that the anion of a Michael donor is described in the present specification (p. 11, lines 4-6) as thought to be capable of acting as catalyst for Michael addition. Consequently, Applicants submit that the present claims are non-obvious over Irie because of the presence of an anion of a Michael donor in the composition of the present claims (page 9, 2nd paragraph).

11. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., usage of an anion of a Michael donor as catalyst for Michael acceptor) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Additionally, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). See also MPEP §2123.

12. Applicants submit that the above arguments are sufficient to establish the non-obviousness of present claim 13 over Irie, because present claim 13 is dependent on present claim 1. Applicants submit that the features recited in present claim 13 provide an additional reason why present claim 13 is non-obvious over Irie (page 10, the last paragraph). Neither of the Michael donors recited in present claim 13 is within the class of Michael donors taught by Irie, and Applicants submit that Irie does not teach or suggest the use of other types of Michael donors. Therefore, Applicants submit that the Michael donor feature provides an additional reason why present claim 13 is non-obvious over Irie (page 11, 1st paragraph).

Applicants submit that the above arguments are sufficient to establish the non-obviousness of present claim 15 over Irie, because present claim 15 is dependent on

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present claim 1. Applicants submit that the features recited in present claim 15 provide an additional reason why present claim 15 is non-obvious over Irie.

The Michael donor taught by Irie is "an acrylate polymer containing a plurality of malonate-terminated pendant groups in the molecule" (col. 2, lines 12-13).

In contrast, the Michael donor recited in present claim 15 is different from the Michael donor taught by Irie. The Michael donor recited in present claim 15 is a polyhydric alcohol and therefore is not an acrylate polymer. Applicants submit that Irie does not teach or suggest the use of Michael donors that are not acrylate polymers. Therefore, Applicants submit that the Michael donor feature provides an additional reason why present claim 15 is non-obvious over Irie (page 11, the last paragraph).

13. It is noted that Irie discloses that typical examples of activated methylene compounds used in the Michael reaction are derivatives of acetoacetic acid, cyanoacetic acid and malonic acid. For use in the crosslinking reaction of resins or polymers, the **Michael donor** must be a compound or polymer having a plurality of activated methylene groups in the molecule. Acrylic monomers having an acetoacetoxyl group can be synthesized relatively easily by reacting diketene with a hydroxylalkyl acrylate or methacrylate such as 2-hydroxyethyl acrylate (HEA) or 2-hydroxyethyl methacrylate (HEMA). Activated methylene-containing acrylic polymers used in the prior art are either polymers of acetoacetylated hydroxyalkyl (meth)acrylate monomers or **acetoacetylated acrylic polyols** produced by reacting diketene with an acrylic polyol polymer (col. 1, lines 26-39).

14. Applicants submit that the above arguments are sufficient to establish the non-obviousness of present claim 16 over Irie, because present claim 16 is dependent on present claim 1. Applicants submit that the features recited in present claim 16 provide an additional reason why present claim 16 is non-obvious over Irie. Irie teaches that a variety of strong base compounds can be used as Michael catalysts in Irie's invention (col. 4, lines 21 to 43). Irie makes no teaching or suggestion that any of these strong base compounds could be specifically excluded from the composition. In contrast, present claim 16 recites compositions in which several common strong base compounds are excluded. Therefore, Applicants submit that the exclusion of the listed strong base compounds provides an additional reason why present claim 15 is non-obvious over Irie (page 12 1st paragraphs).

15. It is noted that in the last line of the previous paragraph should be "claim 16", but not "claim 15". Furthermore, Irie discloses that in certain applications where the curable composition of the present invention is applied onto a pigmented base coat wet-on-wet and baked simultaneously with the base coat as in car body finishing, the catalyst can diffuse into the base coat layer so that the composition is not fully cured. Accordingly, it is advantageous to immobilize the catalyst in component (a) or component (b) (col. 5, lines 27-33). Also see the rejection of claim 21 in paragraph 5 of current Office Action.

It is well settled that "an applied reference may be relied upon for all that it would have reasonably suggested to one of ordinary skill in the art, including not only preferred embodiment, but less preferred and even non preferred". *Merck & Co. v.*

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Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989).

16. Applicants submit that the above arguments are sufficient to establish the non-obviousness of new claims 21-24 over Irie, because new claims 21-24 are dependent on present claim 1. Applicants submit that the features recited in new claims 21-24 provide an additional reason why new claims 21-24 is non-obvious over Irie (page 12, 2nd and 3rd paragraphs).

17. It is noted that the examiner answered above on these arguments (see paragraph 6 of current Office Action).

18. It is worth to mention that Examiner has cited particular columns and line numbers or figures in the references as applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teaching in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, **to fully consider the references in entirety as potentially teaching all or part of the claimed invention**, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

19. In the light of the discussion above, the rejection of record has not been withdrawn. The rejection remains in force.

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Bernshteyn
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